

(no space b/w Roman numeral lead(II))

Need nomenclature

# Reaction Set 1's on Q4

**PPT**

**A/B**

**Redox**

KISS

all salts soluble w/ \_\_\_\_\_

1.  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{NH}_4^+$

2.  $\text{NO}_3^-$ ,  $\text{OAc}^-$ ,  $\text{ClO}_3^-$ ,  $\text{ClO}_4^-$

3 Halide  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$  (Ex  $\text{Ag}^+$ ,  $\text{Pb}^{2+}$ ,  $\text{Hg}_2^{2+}$ )

4 Sulfate Excep  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$

B/L; ~~strong~~ <sup>decom</sup> vs. weak

hydrolysis

anhydrides

Comp

decomp

Lewis

phantoms (unstable prod)

elemental forms

"Single Rep"

ions(aq) "never fail"

electrolysis

fused salt

ions(aq)

Comb

on Exam Rxns always occur

Tips for ions

Big 5

$\text{ClO}_3^-$

• add ite 1 less O  
(Not  $\text{CO}_3^{2-}$ )

$\text{NO}_3^-$

• 1 less w/a prefix (hypo)  
(use hypo decomp)

$\text{CO}_3^{2-}$

• 1 more O  
per (hyper (more))

$\text{SO}_4^{2-}$

• periodicity for  $\text{IO}_3^-$  etc

$\text{PO}_4^{3-}$

• add H hydrogen  
if more than 1-

~~COO~~

Little 5 categories

organ acetate, oxalate

Colors  $\text{MnO}_4^-$ ,  $\text{CrO}_4^{2-}$ ,  $\text{Cr}_2\text{O}_7^{2-}$

Like  $\text{OH}^-$ ,  $\text{CN}^-$   
(named as monatomic,  
thought to be element)

thio  $\rightarrow$  Rep O w/ S  
 $\text{S}_2\text{O}_3^{2-}$ , ~~COO~~

$\text{OCN}^-$  cyanate

$\text{SCN}^-$  thiocyanate

Cation  
"ion"  $\rightarrow$   $\text{NH}_4^+$ ,  $\text{Hg}_2^{2+}$

# Strong Acids

Weak Ac (H<sub>2</sub>O<sub>2</sub>)

HBr, HCl, HI

HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub> (not HSO<sub>4</sub><sup>-</sup>)

↑  
not 100% lost  
so weak

HClO<sub>4</sub> ~~HClO<sub>3</sub>~~ (not HClO<sub>3</sub> 25% dissociate)

# Strong Base

What the L is going on



only 4 ways to combine

SA/SB

SA/WB

WA/SB

WB/WA

↳ H<sub>2</sub>O

↳

↳

⇒

make sure to write appropriate ion

Nick  
cheap side  
has no buffering  
so Jupiter's stomach  
more

SA + WB →

water + conj A of WB

H<sub>3</sub>O<sup>+</sup> + NH<sub>3</sub> →

H<sub>2</sub>O + NH<sub>4</sub><sup>+</sup>

WA + SB →

H<sub>2</sub>O + conj B of WA

HF + OH<sup>-</sup> →

H<sub>2</sub>O + F<sup>-</sup>

WA + WB

Conj A + B

Conj B + A

HF + NH<sub>3</sub>

⇌

NH<sub>4</sub><sup>+</sup>

F<sup>-</sup>

Phantom  $\rightarrow$  gas + water



## Hydrolysis

sodium fluoride solid is sprinkled into  $\text{H}_2\text{O}$



anhydrid - ~~non~~ metal oxide  $\rightarrow$  acid anhydride

(No Redox)



metal oxide  $\rightarrow$  basic anhydride



## Synth



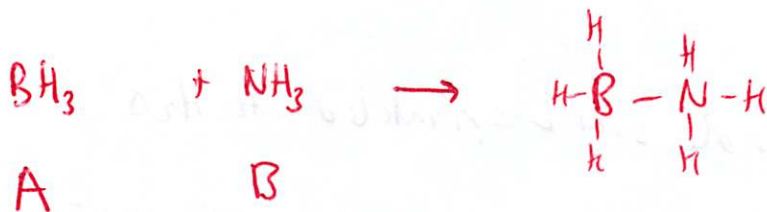
$\uparrow$   
Ca scrubbers  
in smoke stacks

Wall Breakade  
from pollutants in smokestack

decomp



Lewis

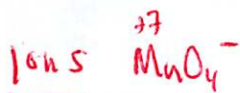


2x charge is + of ligands  
In conc, or excess always go to max.

Redox

any elemental form for Rxn Reactants, prod.  
(P<sub>4</sub>, As<sub>4</sub>, S<sub>8</sub>) @ start condition

Single Rep<sup>+</sup> - don't forget ionic Eqn



only oxidizing agent

Classic oxidizers +  
Reduces

electrolysis - molten salt

Volwels @ anode  
oxygen gas

Consbnants @ cathode  
Hydrogen gas